

THE REARING OF PINK KATY-DIDS

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Among the Long-horned Grasshoppers or Tettigoniidæ, the writer has observed pink individuals only in the genus *Amblycorypha*, the most common member of which in the State of New York is the Oblong-winged Katy-did. In the same genus brownish or straw-colored individuals also occur, as they do among other local species belonging to the genera *Neoconocephalus*, *Orchelimum* and *Conocephalus*. In *Microcentrum rhombifolium*, the Angled-winged Katy-did; *Peterophylla camellifolia*, the so-called "True Katy-did," as well as in *Scudderia*, only green individuals have been observed by the writer.

In the summer of 1924, four pink Katy-dids, belonging to the species *Amblycorypha oblongifolia* (De Geer), were brought to the museum of the Staten Island Institute of Arts and Sciences, and later recorded in the Proceedings of the Institute, Vol. 3, p. 109. They were found either in the Clove Valley, or at West New Brighton, in which general locality pink Katy-dids seem to be most commonly met with on Staten Island.

The female specimen collected September 1 lived until September 15 and was fed willow leaves. On September 13 she shed one of her hind legs. The female collected on September 16 lived in a terrarium until October 1, 1924, and had an abundance of food, eating the leaves of young grape-fruit trees, of honeylocust, and of a *Sedum*. She was seen to lay eggs in the ground. If confined in a glass jar the female tries to lay her flat, white eggs in the glass at the bottom of the jar. Failing in this, she deposits them on any leaf lying at the bottom of the jar.

The year 1925 passed and the eggs laid by the above-mentioned pink Katy-did were almost forgotten. The terrarium stood as usual on a window sill, and while the temperature in the room during the winters of 1924-25 and 1925-26 was often cool, it at no time went below freezing, so the eggs did not experience

the low temperatures which they would naturally have received if laid out of doors.

The terrarium was not tightly covered, and so when the young Katy-dids appeared in the latter part of May, 1926, some of them probably escaped before they were discovered. A pink male, a pink female, and a green male were secured, each of them either pink or green from the time of birth. They had been feeding on some sorrel (*Rumex*) that had come up in the terrarium, but were transferred to golden-rod, certain species of which seem to be among the favorite food plants of *Amblycorypha*.

On July 8 the green male matured, followed by the pink female on July 16. On July 17 the green male sang a few times. On July 20 the pink male matured. It may be noted at this point that just before reaching maturity and acquiring the dark-colored song-apparatus at the base of the tegmina, which latter also are often spotted, that a pink *Amblycorypha* is one of the most beautifully and surprisingly colored of our native insects. It is also one of the most conspicuous, and may be seen afar. It is the reverse of protectively colored, while green individuals of the same species, owing to their protective color, are not easily seen.

On August 2 the three mature insects were placed on exhibition in the Public Museum, where they attracted considerable attention, and sang quite often. The insects sometimes rocked to and fro on their legs, which indeed seemed to be quite unsteady. While an abundance of fresh golden-rod was supplied, the treatment of exhibition life did not agree with the insects, and on August 6 the pink female shed a hind leg, always a sign of weakness in *Amblycorypha*. On August 15, the green male shed a hind leg. On August 16 the pink male was found dead, and it was noted that he had lost three legs, though both hind legs were present. August 17 the green male died. On August 19 the pink female shed a hind leg, and on August 22 she likewise died.

A male *Amblycorypha oblongifolia* was collected at Richmond Valley, Staten Island, August 29, 1926, in which the tegmina were straw-colored, while the head, pronotum, and basal portions of the femora were green. No such bi-colored individuals have been found among the considerable number of pink *oblongifolia* observed; they have been of an all-pink color except for the darker spots on the tegmina and the dark areas about the song

apparatus. As with a number of Homoptera that are usually green, *Gyphona octomaculata* Say has a pink variety, often very brightly colored, and also quite often there are individuals partly green and partly pink in color, differing in this respect from the pink forms of *Amblycorypha*.

The literature relating to pink *Amblycorypha* has become rather extensive. In *Psyche* 2, 1878, 189, Scudder recorded "A Cardinal Grasshopper." In the same journal for 1897, he mentions other pink specimens, and in *Entomological News*, May, 1901, he has a further account, accompanied by a plate showing the beautiful coloring of these insects when alive. This plate was reproduced by Blatchley in his "Orthoptera of Indiana," 1902. In Dr. Lutz's "Field Book of Insects" a pink *oblongifolia* is also shown.

In the *American Naturalist*, 1907, Prof. Wm. Morton Wheeler has a more extended paper on the subject of "Pink Insect Mutants,"* and the various opinions concerning them. Finally in *Entomological News* for February, 1916, Dr. Joseph L. Hancock published his paper on "Pink Katy-Dids and the Inheritance of Pink Coloration."

The pink *Amblycorypha* that Dr. Hancock crossed with a green male laid eggs in 1912, which were subjected to out-of-door conditions and hatched in 1914 and 1915. In 1914 he had ten young *oblongifolia* (eight pink and two green), and in 1915 three (two green and one pink) from the original eggs laid in 1912, the sexes being about evenly divided in both the pink and the green forms.

Under date of December 1, 1918, Dr. Hancock wrote requesting data on all pink, tan or yellow colored Katy-dids, as he had in preparation another paper on the subject. I was able to send him records of eighteen such examples in *Amblycorypha*, including that of a pink male nymph of *Amblycorypha floridana floridana* found at Citrus Center, Florida, May 2, 1912. I believe the pink phase has not heretofore been noted in *floridana*. Dr. Hancock died in Chicago, March 12, 1922, before he had published the paper referred to.

* In THE JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY for March, 1925, the writer has added records of pink or pinkish individuals among cicadas in *Pacarina puella* and *Melampsalta calliope*.

The record here given seems to be the second one of the rearing of pink Katy-dids from the eggs, and the observations on the leg-shedding habit may be of interest. It has generally been supposed when an *Amblycorypha* was found with a missing leg or two, as often happened, that such loss was the result of an accident rather than an actual shedding of the limbs. Probably both causes contribute to the conditions as we find them. It may be added that many species of Orthoptera, including *Amblycorypha oblongifolia*, if subjected to the fumes of tetrachloride of carbon, will be observed to tremble spasmodically, after which the hind legs become disengaged from the body.

Also the postponement of the hatching of the eggs to the second year after they were laid, without having gone through the freezing conditions of out of doors, would seem to be of interest.